

4-6.1

French Main Battle Tank AMX-30 continued

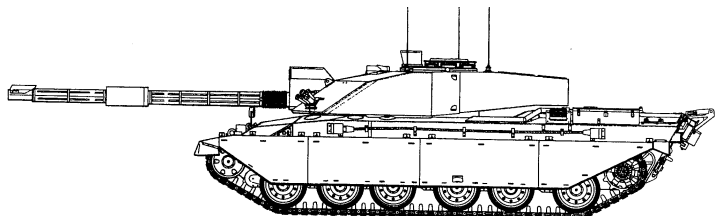
<p>MAIN ARMAMENT AMMUNITION</p> <p>Caliber, Type, Name: 105-mm APFSDS-T, OFL 105 F1, French Giat Maximum Aimed Range (m): 3,000 Max Effective Range (m): Day: 1,800 Night: INA Armor Penetration (mm): NATO triple heavy target; 5,500 m</p> <p>Caliber, Type, Name: 105-mm APFSDS-T, M413, Israeli Military Industries Maximum Aimed Range (m): 6,000 Max Effective Range (m): Day: 2,000 Night: INA Armor Penetration (mm): NATO triple heavy target, 6,000+m</p> <p>Caliber, Type, Name: 105-mm HEAT-T, OCC 105 F1, French Giat Maximum Aimed Range (m): 2,500 Max Effective Range (m): Day: 2,500 Night: INA Armor Penetration (mm): 360 at 0°</p>	<p>105-mm HEAT-T, M456A2, Belgian Mecar Maximum Aimed Range (m): 2,500-8,200 Max Effective Range (m): Day: INA Night: INA Armor Penetration (mm): 432 at 0°</p> <p>105-mm HE, OE 105 F1, French Giat Maximum Aimed Range (m): 2,500 Max Effective Range (m): Day: 2,500 Night: INA Armor Penetration (mm): N/A</p> <p>Other Ammunition Types: Any NATO-standard 105-mm ammunition can be used. They include Belgian Mecar M1060, Chinese Norinco 105, German Rheinmetall DM43, Spanish Santa Barbara C-437, British Royal Ordnance L64A4 and H6/6, US M735 and M833 (depleted uranium), and Canadian FP105 APFSDS-T rounds. Other types available are: HE-T, smoke, illuminating, HESH-T, HE plastic tracer (HEP-T), and canister or APERS-T (flechette).</p> <p>A recent round is the Israeli Military Industries APAM round, which over-flies the target and disperses fragmenting submunitions outward and downward over a much wider kill zone.</p>
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NOTES

AMX-32: Upgraded tank - did not enter production.

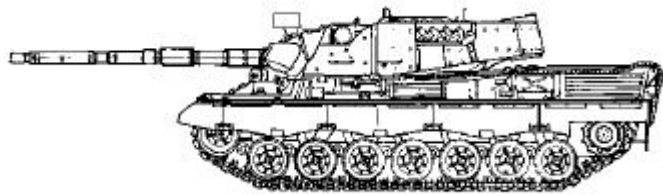
AMX-40: Later upgraded tank - did not enter production.

British Main Battle Tank Challenger 2

	<table><tr><th>Weapons & Ammunition Types</th><th>Typical Combat Load</th></tr><tr><td>120-mm rifled gun</td><td>52</td></tr><tr><td>APFSDS-T</td><td>20</td></tr><tr><td>HESH</td><td>32</td></tr><tr><td>7.62-mm MG</td><td>4,000</td></tr><tr><td>coaxial chain gun</td><td></td></tr><tr><td>cupola AA MG</td><td></td></tr></table>	Weapons & Ammunition Types	Typical Combat Load	120-mm rifled gun	52	APFSDS-T	20	HESH	32	7.62-mm MG	4,000	coaxial chain gun		cupola AA MG	
Weapons & Ammunition Types	Typical Combat Load														
120-mm rifled gun	52														
APFSDS-T	20														
HESH	32														
7.62-mm MG	4,000														
coaxial chain gun															
cupola AA MG															
<p>SYSTEM Alternative Designations: INA Date of Introduction: 1994 Proliferation: At least 2 countries Description: Crew: 4 Combat Weight (mt): 62.5 Chassis Length Overall (m): 8.33 Height Overall (m): 2.50 Width Overall (m): 3.52 Ground Pressure (kg/cm²): 0.97</p> <p>Automotive Performance: Engine Type: 1,200-hp Diesel Cruising Range (km): 450 Speed (km/h): Max Road: 59 Max Off-Road: 45 est Average Cross-Country: 40 Max Swim: N/A Fording Depths (m): 1.1 Unprepared Radio: INA</p> <p>Protection: Armor, Turret Front (mm): 500 KE RHA at 2,000 m/800 CE Applique Armor (mm): INA Explosive Reactive Armor (mm): N/A Active Protective System: N/A Mineclearing Equipment: INA Self-Entrenching Blade: INA NBC Protection System: Yes Smoke Equipment: Smoke grenade launchers (2x5), VEESS</p> <p>ARMAMENT Main Armaments: Caliber, Type, Name: 120-mm rifled gun, L30 CHARM Rate of Fire (rd/min): INA Loader Type: Separate-loading manual Ready/Stowed Rounds: INA Elevation (°): -10 to +20 Fire on Move: Yes</p> <p>Auxiliary Weapon: Caliber, Type, Name: 7.62-mm McDonnell Douglas Chain Gun Mount Type: Turret Coax Maximum Aimed Range (m): INA Max Effective Range (m): Day: INA Night: INA Fire on Move: Yes Rate of Fire: INA</p>	<p>Caliber, Type, Name: 7.62-mm (7.62x 51) AA Machinegun L37A2 Mount Type: Cupola Maximum Aimed Range (m): INA Max Effective Range (m): Day: 800 Night: INA Fire on Move: Yes Rate of Fire (rd/min): INA ATGM Launcher: None</p> <p>FIRE CONTROL FCS Name: Improved Fire Control System (Marconi IFCS) Main Gun Stabilization: 2-plane electric Rangefinder: SAGEM Laser rangefinder Infrared Searchlight: No Sights w/Magnification: Gunner: Thermal Imaging and Gun Sighting System (TOGS-2) Day: Gunner's Primary Sight Field of View (°): INA Acquisition Range (m): 5,000 Night: Barr & Stroud TOGS-2 (with SAGEM thermal imager) Field of View (°): INA Acquisition Range (m): INA Commander Fire Main Gun: INA</p> <p>VARIANTS Challenger 1: Base tank from which Challenger 2 was derived. The latter tank includes 150 improvements, including mobility upgrades, new FCS, guns, and land navigation system, and an APU. Challenger 2E: The tank has a 1,500-hp engine and L30A1 gun. Omani Challenger 2: Variant with GPS, air conditioning and additional radiators.</p> <p>MAIN ARMAMENT AMMUNITION Caliber, Type, Name: 120-mm APFSDS-T, CHARM 3, depleted uranium Maximum Aimed Range (m): 5,000-6,500 Max Effective Range (m): Day: 3,000+ Night: INA Armor Penetration (mm): INA</p> <p>120-mm High-Explosive Squash-Head (HESH), L31 Maximum Aimed Range (m): 5,000 Max Effective Range (m): Day: 3,000 Night: INA Armor Penetration (mm): INA</p> <p>Other Ammunition Types: L15 APDS, L34 WP Smoke</p>														

NOTES None

German Main Battle Tank Leopard 1A1

	<table><tr><th>Weapons & Ammunition Types</th><th>Typical Combat Load</th></tr><tr><td>105-mm rifled gun APFSDS-T HESH-T</td><td>60/later 55</td></tr><tr><td>7.62-mm MG coaxial cupola</td><td>5,500 1,250 1,250</td></tr></table>	Weapons & Ammunition Types	Typical Combat Load	105-mm rifled gun APFSDS-T HESH-T	60/later 55	7.62-mm MG coaxial cupola	5,500 1,250 1,250
Weapons & Ammunition Types	Typical Combat Load						
105-mm rifled gun APFSDS-T HESH-T	60/later 55						
7.62-mm MG coaxial cupola	5,500 1,250 1,250						
<p>Leopard 1A1A1 with applique armor</p>							

<p>SYSTEM Alternative Designations: INA Date of Introduction: 1965 Proliferation: At least 12 countries Description: Crew: 4 Combat Weight (mt): 40/42.4 LA1A1 and after Chassis Length Overall (m): 7.09 Height Overall (m): 2.61 Width Overall (m): 3.37 Ground Pressure (kg/cm²): 0.86/0.88 LA1A1 and after</p> <p>Automotive Performance: Engine Type: 830-hp Diesel multi-fuel Cruising Range (km): 600 Speed (km/h): Max Road: 65 Max Off-Road: INA Average Cross-Country: INA Max Swim: N/A Fording Depths (m): 1.2 Unprepared, 2.25 prepared, 4.0 snorkel</p> <p>Radio: INA</p> <p>Protection: Armor, Turret Front (mm): 250 RHA, KE/230 CE Applique Armor (mm): Available, standard on L1A1A1 and after Explosive Reactive Armor (mm): Brenus available Active Protective System: N/A Mineclearing Equipment: No Self-Entrenching Blade: No NBC Protection System: Yes Smoke Equipment: 2x4 76-mm smoke grenade launchers</p> <p>ARMAMENT Main Armament: Caliber, Type, Name: 105-mm (51 Cal) L7A3 rifled gun Rate of Fire (rd/min): 10 Loader Type: Manual Ready/Stowed Rounds: 13/47 Elevation (°): -9 to +20 Fire on Move: No/Yes (to 28 km/h) Leopard 1A1A1 and after</p> <p>Auxiliary Weapons: Caliber, Type, Name: 7.62-mm (7.62x51) Machinegun M3 Mount Type: Turret Cupola Maximum Aimed Range(m): 1,400 Max Effective Range (m): Day: INA Night: INA Fire on Move: Yes Rate of Fire (rd/min): INA</p>	<p>Caliber, Type, Name: 7.62-mm (7.62x51) Machinegun MG3 Mount Type: Turret Cupola Maximum Aimed Range(m): INA Max Effective Range (m): INA Fire on Move: Yes Rate of Fire (rd/min): INA ATGM Launcher: N/A</p> <p>FIRE CONTROL FCS Name: N/A Main Gun Stabilization: None/stabilization for -1A1A1 and after Rangefinder: TEM 2A Optical Infrared Searchlight: XSW-30-U red/white Sights w/Magnification: Gunner: Day: TZF 1A telescope, 8x Field of View (°): INA Acquisition Range (m): 1,400 Night: IR available Field of View (°): INA Acquisition Range (m): 1,000/1,500 white light Commander Fire Main Gun: No</p> <p>VARIANTS Leopard 1 was the baseline tank (first production batch) with original tracks, and without track skirts, stabilization or thermal sleeve for gun. The Leopard 1A1 version, as featured, can be fitted with applique armor. Leopard 1A1A1 is the third production lot, with applique, air filter intakes. Early tanks have been upgraded to this standard.</p> <p>Leopard 1A2: Production batch and -1A1 upgrade with a new cast turret, improved NBC system, II night sights, and air conditioning. Italian Leopard 1A2: Upgrade with Sirio thermal FCS, gun stabilization and turret drive.</p> <p>Leopard 1A3: Production system with previous improvements, larger welded spaced armor turret, and improved FCS (by country).</p> <p>Leopard 1A4: Final production system, with AEG-Telefunken FCS.</p> <p>Leopard 1A5: More than 1,300 -1A1/1A2 tanks have been refitted with an EMES-18 FCS and thermal sights. Leopard 1A5 (BE): Belgian upgraded -1A1/1A2s, with new FCS, FN MAG 7.62-mm MGs, and thermal sights.</p> <p>Leopard 1-V: Dutch version, of -1A1A1, with German EMES-12A3 FCS and PZB II night sight.</p> <p>A variety of systems use Leopard 1 chassis. These include Gepard air defense gun, engineer and recovery vehicles, and a bridgelayer.</p>
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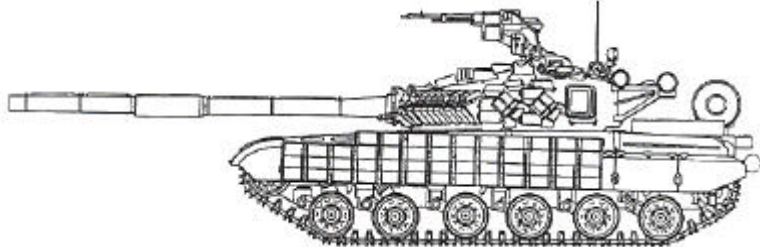
German Main Battle Tank Leopard 1A1 continued

<p>MAIN ARMAMENT AMMUNITION Caliber, Type, Name: 105-mm APFSDS-T, DM43, German Rheinmetall Maximum Aimed Range (m): 2,000+ Max Effective Range (m): Day: 1,400/2,000 Leo 1A1 and later Night: 1,000 IR/1,500 white light/more with thermal Armor Penetration (mm): NATO triple heavy target, 5,500 m</p> <p>105-mm APFSDS-T, M413, Israeli Military Industries Maximum Aimed Range (m): 6,000 Max Effective Range (m): Day: 2,000 Night: 1,000 IR/1,500 white light/more with thermal Armor Penetration (mm): NATO triple heavy target, 6,000+m</p> <p>105-mm HEAT-T, OCC 105 F1, French Giat Maximum Aimed Range(m): 2,500 Max Effective Range (m): Day: 2,500 Night: INA Armor Penetration (mm): 360 at 0°</p> <p>105-mm HEAT-T, M456A2, Belgian Mecar Maximum Aimed Range (m): 2,500-8,200 Max Effective Range (m): Day: INA Night: INA Armor Penetration (mm): 432 at 0°</p>	<p>105-mm HESH-T, DM512, Rheinmetall Maximum Aimed Range (m): 4,000 Max Effective Range (m): Day: 1,500 Night: 1,000 IR/1,500 white light/more with thermal Armor Penetration (mm): N/A</p> <p>105-mm HE, OE 105 F1, French Giat Maximum Aimed Range (m): 2,500 Max Effective Range (m): Day: 2,500 Night: INA Armor Penetration (mm): N/A</p> <p>Other Ammunition Types: Any NATO-standard 105-mm ammunition can be used. They include: Chinese Norinco 105, British Royal Ordnance L64A4 and H6/6, Belgian Mecar M1060, French Giat OFL 105 F1, Spanish Santa Barbara C-437, US M735 and M833 (depleted uranium), and Canadian FP105 APFSDS-T rounds. Other types available are: HE-T, smoke, illuminating, HESH-T, HE plastic tracer (HEP-T), and canister or APERS-T (flechette).</p> <p>A recent round is the Israeli Military Industries APAM round, which over-flies the target and disperses fragmenting submunitions outward and downward over a much wider kill zone.</p>
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NOTES

More than a dozen fire control systems, many with thermal sights, are available for this tank. A version with LLLTV sights is the Leopard 1A1A2. Improved stabilization systems include US HR Textron, French SAMM, and German FWM. Other options include a front mounted dozer blade, improved air conditioning, a 120-mm smoothbore gun, and other secondary

Russian Main Battle Tank T-64B

 <p style="text-align: center;">T-64BV</p>	<table><tr><th>Weapons & Ammunition Types</th><th>Typical Combat Load</th></tr><tr><td>125-mm smoothbore gun</td><td>37</td></tr><tr><td>APFSDS-T</td><td>(mix est) 12</td></tr><tr><td>HEAT</td><td>2</td></tr><tr><td>Frag-HE</td><td>17</td></tr><tr><td>ATGM</td><td>6</td></tr><tr><td>7.62-mm coax MG</td><td>1,250</td></tr><tr><td>12.7-mm NSVT AA MG</td><td>300</td></tr></table>	Weapons & Ammunition Types	Typical Combat Load	125-mm smoothbore gun	37	APFSDS-T	(mix est) 12	HEAT	2	Frag-HE	17	ATGM	6	7.62-mm coax MG	1,250	12.7-mm NSVT AA MG	300
Weapons & Ammunition Types	Typical Combat Load																
125-mm smoothbore gun	37																
APFSDS-T	(mix est) 12																
HEAT	2																
Frag-HE	17																
ATGM	6																
7.62-mm coax MG	1,250																
12.7-mm NSVT AA MG	300																
<p>SYSTEM Alternative Designations: INA Date of Introduction: 1979 Proliferation: At least 2 countries Description: Crew: 3 Combat Weight (mt): 40.3 Chassis Length Overall (m): 6.45 Height Overall (m): 2.17 Width Overall (m): 3.41 Ground Pressure (kg/cm²): 0.86</p> <p>Automotive Performance: Engine Type: 720-hp Diesel Cruising Range (km): 500 with extra tanks Speed (km/h): Max Road: 60 Max Off-Road: INA Average Cross-Country: INA Max Swim: N/A Fording Depths (m): 1.8 Unprepared, 5.0 w/snorkel</p> <p>Radio: R-123M, R-124 intercom</p> <p>Protection: Armor, Turret Front (mm): 450 KE RHA at 2,000 m/900 CE Applique Armor (mm): N/A Explosive Reactive Armor (mm): Standard on T-64BV Active Protective System: Available Mineclearing Equipment: Mine rollers and plows available Self-Entrenching Blade: Yes NBC Protection System: Yes Smoke Equipment: Smoke grenade launchers (4x 81-mm each side of turret), and 24 grenades. Vehicle engine exhaust smoke system</p> <p>ARMAMENT Main Armament: Caliber, Type, Name: 125-mm smoothbore gun 2A46-2 Rate of Fire (rd/min): 6-8 (lower in manual mode) Loader Type: Separate-loading autoloader, ATGMs manual Ready/Stowed Rounds: 24 in carousel, 6 ATGMs manual/7 stowed Elevation (°): -6 to +18 Fire on Move: Yes (30 km/h rounds/low speed or stop ATGMs)</p> <p>Auxiliary Weapon: Caliber, Type, Name: 7.62-mm (7.62x 54R) Machinegun PKT Mount Type: Turret coax Maximum Aimed Range (m): 2,000</p>	<p>Max Effective Range (m): Day: 1,000 Night: 850-1,300 Fire on Move: Yes Rate of Fire (rd/min): 250 practical / 650 cyclic, 2-10 round bursts</p> <p>Caliber, Type, Name: 12.7-mm (12.7x108) AA MG NSVT Mount Type: Turret top Maximum Aimed Range (m): 2,000 Max Effective Range (m): Day: 1,500 ground/1,600 for air targets (APDS) Night: 800-1,300 Fire on Move: Yes Rate of Fire (rd/min): 210 practical/ 800 air targets in bursts</p> <p>ATGM Launcher: Name: 2A46-2 tank gun Launch Method: Gun-launched Guidance: SACLOS Command Link: Encoded radio frequency Launcher Dismountable: No</p> <p>FIRE CONTROL FCS Name: INA Main Gun Stabilization: 2E26M 2-plane Rangefinder: Laser Infrared Searchlight: Yes Sights w/Magnification: Gunner: Day: 1G42 Field of View (°): INA Acquisition Range (m): 5,000 Night: TPN-1-49-23 Field of View (°): INA Acquisition Range (m): 800-1,300 (est) Commander Fire Main Gun: No</p> <p>VARIANTS T-64A: Production version of base tank. That tank has a history of reliability problems. It also lacks the high armor protection, track skirts, a FCS and ATGM launch capability of T-64B. T-64BK: Command tank version, with 10-m whip antenna. T-64B1: Version of -B tank without ATGM launch capability. T-64BV: Variant noted in the above line drawing has Kontakt ERA mounted. This variant is more likely for encounter by US forces.</p>																

Russian Main Battle Tank T-64B continued

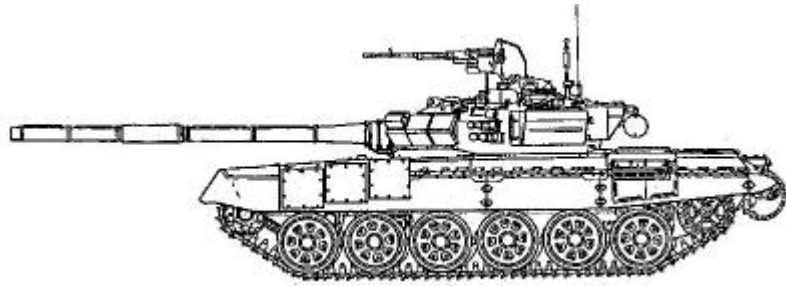
MAIN ARMAMENT AMMUNITION Caliber, Type, Name: 125-mm APFSDS-T, BM-42M Maximum Aimed Range (m): 3,000-4,000 Max Effective Range (m): Day: 2,000-3,000 Night: 850-1,300 Armor Penetration (mm): 590-630 at 2,000 meters 125-mm Frag-HE-T, OF-26 Maximum Aimed Range (m): 5,000 Max Effective Range (m): Day: INA Night: 850-1,300 Armor Penetration (mm): INA 125-mm HEAT-MP, BK-29M Maximum Aimed Range (m): 4,000 Max Effective Range (m): Day: 2,000-3,000 Night: 850-1300 Armor Penetration (mm): 650-750	125-mm HEAT, BK-27 Maximum Aimed Range (m): 4,000 Max Effective Range (m): Day: 2,000-3,000 Night: 850-1,300 Armor Penetration (mm): 700-800 Other Ammunition Types: Giat 125G1 APFSDS-T, Russian BM-42 and BM-32 APFSDS-T. Note: The Russians may have a version of the BM-42M with a DU penetrator. Antitank Guided Missile: Name: AT-8/SONGSTER Warhead Type: Shaped charge (HEAT) Armor Penetration (mm): 700 (RHA) conventional Range (m): 4,000
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NOTES

The night sight cannot be used to launch the ATGM. The daysight can be used at night for launching ATGMs if the target is illuminated. A variety of thermal sights is available. They include the Russian Agava-2, French SAGEM-produced ALIS and Namut sight from Peleng. There are thermal sights available for installation which permit night launch of ATGMs.

The more recent BK-27 HEAT round offers a triple-shaped charge warhead and increased penetration against conventional armors and ERA. The BK-29 round, with a hard penetrator in the nose is designed for use against reactive armor, and as an MP round has fragmentation effects. If the BK-29 HEAT-MP is used, it may substitute for Frag-HE (as with NATO countries) or complement Frag-HE. With three round natures (APFSDS-T, HEAT-MP, ATGMs) in the autoloader vs four, more antitank rounds would be available for the higher rate of fire.

Russian Main Battle Tank T-90

	<table><tr><th>Weapons & Ammunition Types</th><th>Typical Combat Load</th></tr><tr><td>125-mm smoothbore gun APFSDS-T HEAT-MP/HEAT HE-Shrapnel/Frag-HE ATGM</td><td>43 (mix est) 14 3 20 6</td></tr><tr><td>7.62-mm coax MG</td><td>2,000</td></tr><tr><td>12.7-mm NSVT AA MG</td><td>300</td></tr></table>	Weapons & Ammunition Types	Typical Combat Load	125-mm smoothbore gun APFSDS-T HEAT-MP/HEAT HE-Shrapnel/Frag-HE ATGM	43 (mix est) 14 3 20 6	7.62-mm coax MG	2,000	12.7-mm NSVT AA MG	300
Weapons & Ammunition Types	Typical Combat Load								
125-mm smoothbore gun APFSDS-T HEAT-MP/HEAT HE-Shrapnel/Frag-HE ATGM	43 (mix est) 14 3 20 6								
7.62-mm coax MG	2,000								
12.7-mm NSVT AA MG	300								
<p>SYSTEM Alternative Designations: T-90S, T-90E Date of Introduction: 1994 Proliferation: At least 1 country Description: Crew: 3 Combat Weight (mt): 46.5 Chassis Length Overall (m): 6.86 Height Overall (m): 2.23 Width Overall (m): 3.37 Ground Pressure (kg/cm²): 0.87</p> <p>Automotive Performance: Engine Type: 1,000-hp Diesel (See NOTES) Cruising Range (km): 500 km/650 km with extra tanks Speed (km/h): Max Road: 60 Max Off-Road: INA Average Cross-Country: INA Max Swim: N/A Fording Depths (m): 1.2 Unprepared, 5.0 w/snorkel</p> <p>Radio: R-163-504 UHF, R-163-UP receiver/R-173 for T-90S</p> <p>Protection: Armor, Turret Front (mm): 780-810 KE, 1,020-1,220 CE Applique Armor (mm): Turret roof, front of track skirt Explosive Reactive Armor (mm): Kontakt-5 2nd Generation ERA Active Protective System: TshU-1-7/Shtora-1 countermeasure suite Mineclearing Equipment: Roller-plow set and plows available Self-Entrenching Blade: Yes NBC Protection System: Yes Smoke Equipment: 12 x 3D17 smoke grenade launchers, VEES</p> <p>ARMAMENT Main Armaments: Caliber, Type, Name: 125-mm smoothbore gun 2A46M-1 or -4 Rate of Fire (rd/min): 7-8 (lower in manual mode) Loader Type: Separate-loading autoloader, and manual Ready/Stowed Rounds: 22 in carousel, 15 more at hand /6 (est) Elevation (°): INA Fire on Move: Yes (gun rounds and ATGMs)</p>	<p>Auxiliary Weapon: Caliber, Type, Name: 7.62-mm (7.62x 54R) Machinegun PKT Mount Type: Turret coaxial Maximum Aimed Range (m): 2,000 Max Effective Range (m): Day: 800 Night: 800 Fire on Move: Yes Rate of Fire (rd/min): 250 practical / 650 cyclic, 2-10 round bursts</p> <p>Caliber, Type, Name: 12.7-mm (12.7x108) AA MG NSVT Mount Type: Turret top Maximum Aimed Range (m): 2,000 Max Effective Range (m): Day: 1,500 Night: 800-1,300 Fire on Move: Yes Rate of Fire (rd/min): 210 practical/ 800 air targets in bursts</p> <p>ATGM Launcher: Name: 2A46M-1 tank gun Launch Method: Gun-launched Guidance: SACLOS laser-beam rider, REFLEKS missile launcher Command Link: Encoded infrared laser beam Launcher Dismountable: No</p> <p>FIRE CONTROL FCS Name: FCS 1A45T Main Gun Stabilization: 2E42-4, 2-plane Rangefinder: Laser sight Infrared Searchlight: Yes, when II sight employed (See NOTES) Sights w/Magnification: Gunner: Day: 1A43 and 1G46/PERFECT, 3.6/12x Field of View (°): 20/2.5 Acquisition Range (m): 5,000 detection (70%P-hit for ATGM) Night: AGAVA-2 (See NOTES) Field of View (°): INA Acquisition Range (m): 2,600 (See NOTES) Commander Fire Main Gun: Yes</p> <p>VARIANTS T-90E: INA T-90S: Export variant T-90SK: Export command variant</p>								

Russian Main Battle Tank T-90 continued

<p>MAIN ARMAMENT AMMUNITION</p> <p>Caliber, Type, Name: 125-mm APFSDS-T, BM-42M Maximum Aimed Range (m): 3,000-4,000 Max Effective Range (m): Day: 2,000-3,000 Night: 2,000-2,600 Armor Penetration (mm): 590-630 at 2,000 meters</p> <p>125-mm HE-Shapnel Focused-Fragmentation, Ainet Maximum Aimed Range (m): 5,000 Max Effective Range (m): Day: 4,000 Night: 2,600 Tactical AA Range: 4,000-5,000 Armor Penetration (mm): INA</p> <p>125-mm Frag-HE-T, OF-26 Maximum Aimed Range (m): 5,000 Max Effective Range (m): Day: INA Night: 2,600 Armor Penetration (mm): INA</p> <p>125-mm HEAT-MP, BK-29M Maximum Aimed Range (m): 4,000 Max Effective Range (m): Day: INA Night: 2,600 Armor Penetration (mm): 650-750</p>	<p>125-mm HEAT, BK-27 Maximum Aimed Range (m): 4,000 Max Effective Range (m): Day: INA Night: 2,600 Armor Penetration (mm): 700-800</p> <p>Other Ammunition Types: French Giat 125G1 APFSDS-T, Russian BM-42 and BM-32 APFSDS-T. Note: The Russians may have a version of the BM-42M with a DU penetrator.</p> <p>Antitank Guided Missiles: Name: AT-11/SVIR Warhead Type: Shaped charge (HEAT) Armor Penetration (mm): 700 (RHA) behind ERA/800 conventional Range (m): 5,000</p> <p>Name: AT-11B/INVAR Warhead Type: Tandem shaped charge Armor Penetration (mm): 800 (RHA) behind ERA /870 conventional Range (m): 5,000</p>
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NOTES

The original tank version of the tank has an 840-hp diesel engine. The engine in subsequent models is upgraded. Engine options include 950, 1,000 and 1,100 hp.

The tank may be fielded with the original II sight from the T-80 series (Buran-PA, 800-1300 meters range). However, marketing materials feature the AGAVA-2 thermal sight. There are thermal sights available which permit night launch of ATGMs.

The T-90 may be fielded with full Shtora-1 package (laser warning receiver with auto-slew gun capability, LWR-directed smoke grenade launchers, and EO-IR jammer), with a partial package, or without Shtora-1. Shtora-1 illuminators can be used for night illumination.

An improved gun, 2A46M-4, with improved accuracy and use life is available for fitting to the T-90.

The BK-29 round, with a hard penetrator in the nose is designed for use against reactive armor, and as an MP round has fragmentation effects. The more recent BK-27 HEAT round offers a triple-shaped charge warhead and 50 mm more penetration.

The electronic fuzing system for HE-Shrapnel rounds uses technology similar to that for French Oerlikon's AHEAD round. The round is specially designed to defeat targets by firing fragmentation patterns forward and radially, based on computer calculated settings from the LRF and other inputs. Targets are helicopters and dug in or defilade priority ground threats, such as ATGM positions. Rate of fire is 4 rd/min.

The 12.7-mm MG NSVT has both remote electronically operated sight PZU-5 with vertical stabilization, night acquisition, and a gun-mounted K10-T reflex sight.